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e-meetings

Desktop and Room VideoConferencing

BY BRADLEY J. ROBERTS

As we quickly approach the year 2000, a new jargon is becoming as common as "what's your email address?" The letter "e" is the first letter of many well-known Internet terms. We are constantly being bombarded with the "E" jargon "e-mail," "e-shopping," "e-tickets," "e-commerce," etc. This leads us to the title of this article.

With the continuing Internet revolution that society is experiencing, it seems only logical to recognize the value and necessity of conducting e-meetings, desktop and room-based VideoConferencing. As this technology advances, and we learn to efficiently use it, we will have taken another big step toward electronically minimizing geographic separation in personal and business realms. For the purpose of this general discussion, specific vendors and technical specifications will not be included. What's important is this 3-dimensional communication (merging voice, video and data) is becoming feasible for residential use and a necessity for corporate internal & external communications.

Room based business systems are used to bring groups of people together in the same venue regardless of their geographic separation. Room-based systems are considerably more expensive to setup and maintain compared to desktop configurations. This is largely due to the acquisition of the high-end dedicated hardware, facilities, and fast connections. Full-sized units are configured with a cabinet that houses the core electronic components, TV monitor, high resolution camera, sound system, and connection to a corporate Local Area Network (LAN) or Intranet, Integrated Services Digital Network (ISDN), or a satellite modem. With the addition of a desktop/laptop PC, we can employ technology to enable real time data collaboration with PC-based applications and access to network resources. Compact portable room units are now available and help fill the gap between the large costly room systems and the PC desktop systems. Neither of these systems are designed to be mobile.

The increasing competitive pace of business requires informed decisions. Information is becoming a new currency. Gone are the days when problem-solving and decision-making processes were dependent on the U.S. mail or juggling meeting and travel schedules for face-to-face meetings. Using smart cell phones with organizers and voice mail, FAXES, e-mail, and laptops, today's tools empower us to interact within a matter of minutes and hours instead of days and weeks. VideoConferencing tools help businesses succeed in this competitive race with the clock. As society and technology continues to squeeze more expectations into each day, delays and excuses are not part of the formula for success and longevity. Simply put, real time 3-dimensional VideoConferencing and collaboration with data, immediately impacts business in time and money, while achieving higher participant accountability and improved communications.

Video phone systems are another alternative for VideoConferencing. These systems are audio packages enhanced with a video dimension. In other words, this is the communications system used by the 1960's animated television program The Jetsons. Currently, there are PC-based and phone-based configurations available to the business and private sector. Both systems are easy to setup and user friendly. Each has its advantages in providing effective communication.

Reasonably priced PC versions are available but require a high end central processing unit (CPU) with multimedia for acceptable performance. Input is accepted from compatible video recorders, camcorders, and digital cameras, depending on the capabilities of the peripherals and PC hardware. Software is typically included to author multimedia presentations and enhance the video phone experience. You're able to send and receive voice and video mail, as well as, track and log most phone-related activities. The user is empowered with the software tools to organize and direct home and business activities to their individual needs.

A phone-based system can be attached to your existing touch-tone phone. It requires no special phone lines and does not interfere or prevent audio-only phone calls. A big consideration when selecting a phone-based system is where each party prefers viewing the other. Your two viewing options are a TV monitor or a built-in display within the phone-based peripheral. The all-in-one built-in display configurations are preferred for business settings due to desktop space requirements. The TV monitor display is very popular in the home environment as family members can share real time events in the comfort of their homes. The costs of these setups are becoming more reasonable as more manufacturers introduce their products. Many predict this technology will eventually replace the standard phone for business and home environments.

PC Desktop systems with VideoConferencing capabilities are becoming more common, just as sound cards and modems did over the past five years. Major PC manufacturers are beginning to provide VideoConferencing as a peripheral option. Add-on packages from an increasing number of well-known manufacturers are available at retail and online electronics outlets. The advantages of these systems are being realized by families, friends, associates and small businesses. Seeing, hearing, transferring data, and sharing applications in real time is what makes text-based e-mail and chat/discussion sessions child's play. Initially, most home users will be attracted to the video and audio dimensions of VideoConferencing. The corporate sectors find these to be an economical communications solution for field offices and their mobile travelers. As with any new electronic gadget, the price is steadily decreasing while the performance and efficiency increases. OK, I know what you're thinking, "this sounds terrific, but, what's the catch?"

Well, the catch is the bandwidth, that electronic pipeline from your PC to the world. Most home systems access the Internet through an Internet Service Provider (ISP) via telephone line using 28.8, 33.6, or 56 kilobits (Kbps) analog modems. None of these analog modems are capable of sufficiently handling the necessary bandwidth for true real time VideoConferencing. For successful VideoConferencing at 15 frames per second (fps), 128 kilobits is considered to be the minimum requirement. Video quality is the single most important feature for success and acceptance, and the bandwidth directly affects the picture refresh rates. Most people are comfortable with refresh rates of 15-30 fps; 30 fps is considered full motion video customary in videos and public television broadcasts. Refresh rates less than 25 fps result in varying degrees of jerkiness and possible synchronization loss between the video and audio, making it distractive, and hard to following during viewing. Today's technology for providing adequate bandwidth include digital subscriber line (DSL), digital cable Internet, and satellite.

Today's Technology Today enables us to enjoy the rewards of this technology, with only a few shortcomings. Without realizing it, we are being prepared for a communications revolution. Clever forward thinking commercials on major public, cable and satellite broadcasts, portray this communication revolution as enhancing the very fabric of our lives. Yes, the technology is here and available. No, it is not widely available yet nor is the level of performance and reliability adequate.

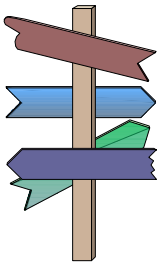
Digital subscriber lines are being promoted by some regional telephone companies to their business and residential clients. From a consumer perspective the concept is simple. High-speed voice and data simultaneously transported over an existing phone line. The result is information transmission at speeds much faster than the best available analog modems. A recent Federal Communication Commission (FCC) ruling has improved competition between companies offering these high-speed Internet connections by requiring regional carriers to share access to existing lines with businesses that want to offer high-speed Internet connections. This decision makes it substantially cheaper for high-speed Internet service businesses to compete with telephone companies and results in lower costs to residential subscribers.

Digital cable is being promoted by local cable TV companies. From a consumer perspective, the concept is simple and involves high-speed voice and data services simultaneously transported over existing TV cable lines. The result is information transmission at speeds significantly faster than the best available analog modems. At the present time, several digital cable companies report that users find Internet video conferencing very acceptable.

Satellite-based systems are also relatively simple to use. PC-based requests are transported by modem to your ISP and/or satellite ISP. Information is then retrieved by the satellite ISP and uploaded to the satellite. Your satellite dish receives the transmission and routes it to your PC via satellite modem. Data transmission speeds are significantly faster than the best analog modems or dedicated ISDN line Satellite-based systems are currently less popular than DSL or digital cable, but, are an alternative in rural areas where DSL and digital cable is unavailable. Travelers, and vacationers like satellite-based systems for their portability and ease of use. Businesses are beginning to realize this as a cost-effective solution and alternative for retrieving and delivering high bandwidth information. Satellite communication has been used for decades by governments and large corporations because of speed, reliability and security

VideoConferencing and data collaboration is adding the color and depth to the communication revolution initiated by the widespread use of text based email.

Road Signs:



"When one door closes another door opens; but we so often look so long and so regretfully upon the closed door, that we do not see the ones which open for us.

--Alexander Graham Bell

We wish to thank all the individuals who have contributed articles for previous newsletters. If you are aware of a new technology, (or a fresh spin on an old one) please jot down your ideas and submit them via e-mail to me at the address below. Or, if you have an aversion to writing, just donate 15 minutes of your time for an interview (either by phone or in person), and I'll format the information for you. You can then review the article for accuracy (via e-mail or hard copy) and upon publication, you'll become famous in a matter of days. Remember, although we cater to road-related technology, ANY new technology information is welcome.

Please send all submissions to Kristi Swisher by e-mail (*kswisher@fhwa.dot.gov*) or you can talk to her at (360.696.7572). Be sure your name, title, and phone number are the way you want them to appear in the article. Articles are subject to editor/layout approval and may be condensed if space is limited.

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Federal Highway Administration
610 East Fifth Street
Vancouver, WA 98661